

Frequently Asked Questions (FAQs)

COVID-19's Effect on the 4th Quarter 2020 Retail E-commerce Sales Report

Data Collection

How has the collection of Quarterly Retail E-commerce Sales data been affected?

For the 4th Quarter 2020 Retail E-commerce Sales Report, processing and data quality were monitored throughout the quarter and quality metrics, including response rates, fell within normal ranges for this survey.

Methodology

Were any estimates withheld or delayed because of data collection problems?

No. All estimates were released as scheduled.

Did the Census Bureau modify its usual weighting or estimation methods used to produce monthly retail estimates for the 4th Quarter 2020?

No. Standard weighted and estimation methods were used to produce all indicator estimates for 4th Quarter 2020.

Has the reliability of the monthly and quarterly retail estimates changed?

No. The reliability of the retail estimates as measured by the coefficient of variation for monthly totals and the standard error for quarter-to-quarter change has not changed substantially. For the published industries, reported data for 4th Quarter 2020 exhibited variation similar to that for prior quarters.

Seasonal Adjustment

Did the Census Bureau alter the procedures for developing quarterly seasonally adjusted estimates for retail data?

Yes. For the quarterly seasonally adjusted sales estimates, the MRTS seasonally adjusted estimates for each month are summed to create the quarterly sales estimates. Therefore any adjustment made to the monthly estimates in a given quarter contribute to that quarter's 2020 sales estimates as well. Consistent with our approach since March 2020, during MRTS processing an alteration was made in an option in the Census Bureau's X-13ARIMA-SEATS seasonal adjustment software (the "additive outlier adjustment" option) for the October-December 2020 sales estimates for some kinds of business. This was done in effort to ensure that the published seasonally adjusted values fully include any immediate effects. These effects are not typical month effects and so should not be permitted to influence the seasonal factors for the monthly sales estimate and surrounding month. The altered option was applied to each kind of business whose monthly unadjusted value was found to be statistically untypical, as indicated by the appropriate t-statistic having a magnitude larger than a commonly used "critical value", and for which there were independent

indications of an impact. Such indications confirm that a monthly survey value has an unusual potential to be untypical and justify the use of a standard critical value. In a usual month, every survey value is “blindly” tested, therefore a higher critical value is used, making it more difficult for the survey value to be classified as untypical.

For the quarterly seasonally adjusted e-commerce estimates, seasonal adjustment is performed on the quarterly e-commerce estimates, rather than on each month individually. For 4th quarter 2020, the same altered option was applied to quarterly ecommerce levels whose 4th quarter unadjusted value was found to be statistically untypical, as indicated by the appropriate t-statistic having a magnitude larger than a commonly used “critical value”, and for which there were independent indications of an impact.

How was the survey value for a kind of business determined to be out of the ordinary?

Each month/quarter, independent indications of how each kind of business performed are researched as part of our normal review of the estimates to detect reporting errors. This research includes, but is not restricted to, conversations with companies in our survey, a review of publicly available press releases from both companies and industry associations, and a review of other economic indicators.

For retail estimates (both monthly sales and quarterly e-commerce), the value was considered to be out of the ordinary if it was found to be statistically untypical (as indicated by the appropriate t-statistic having a magnitude larger than a “standard” critical value) and independent sources indicated an impact.

Additional Information

Are there additional Census Bureau resources available on the COVID-19 Pandemic?

Yes. The Census Bureau has created a [COVID-19 reference page](#) which includes links to relevant Census data sources.

Source: U. S. Census Bureau
Economic Indicators Division

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